

App. Ser. No. 09/915,184

Atty. Docket No. P1292

Amendments to the claims:*Please amend claims 31 and 32 as follows:*

Claim 1 (previously amended): A laser package comprising:

a laser diode source having a first Fabry-Perot cavity having a first cavity axis between a back facet and a front facet, the back facet having a first reflectance and the front facet having a second reflectance, the first reflectance being greater than the second reflectance, for providing a first light output for an optical application;

a light monitor positioned adjacent to the back facet and aligned to receive a second light output from the back facet of the laser diode source;

a pigtail fiber having a lensed fiber input end and positioned from the front facet of the laser diode source to form an optical coupling region and aligned relative to a lasing cavity of the laser diode source to receive the first light output into the fiber, the first light output exiting the package for coupling to the application, wherein said lensed fiber input end comprises a biconic lens; and

a first portion of the first light output from the lasing cavity reflected off the lensed fiber input end with a second portion directed back into the lasing cavity and a third portion reflected off of the laser diode front facet

said front facet forming with the lensed fiber input end a second Fabry-Perot cavity generating light that is periodically in and out of phase with the light generated in the first Fabry-Perot cavity due to changes in the length of the second Fabry-Perot cavity caused by package ambient temperature changes so that a tracking error is generated in a signal developed by the light monitor, the biconic lens suppressing the formation of the second Fabry-Perot cavity.

Claims 2-6 (previously canceled)

Claim 7 (previously amended): The laser package of claim 1 wherein said biconic lens comprises an offset biconic lens having an origin of a first radius of a lens surface offset from a longitudinal center axis of the pigtail fiber at the lensed fiber input end.

Claim 8 (previously amended): The laser package of claim 7 wherein a center of a core of the pigtail fiber is co-planar with the first cavity axis of the laser diode source.

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Claim 9 (previously amended): The laser package of claim 7 wherein a center of a core of said pigtail fiber at the lensed fiber input end is at an angle of about 2-6 degrees relative to the first cavity axis of the laser diode source.

Claim 10 (original): The laser package of claim 7 wherein the origin is offset between $1/3$ - $2/3$ of a mode field diameter.

Claim 11 (original): The laser package of claim 7 wherein the pigtail fiber has a core with a core diameter and the origin is offset $1/4$ to $2/3$ of the core diameter.

Claim 12 (original): The laser package of claim 7 wherein the origin is offset from the longitudinal center axis by about 2 microns.

Claim 13 (previously canceled)

Claim 14 (original): The laser package of claim 1 further comprising a reflective coating provided on a surface of said lensed fiber input end having a third reflectance, the third reflectance being greater than the second reflectance of said front facet of said laser diode source.

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Claims 15-22 (previously canceled)

Claim 23 (previously amended): A laser source module comprising:

a laser diode having a front facet; and

an optical fiber with a center axis and having

a lensed fiber end having a biconic lens with a center of curvature offset from the center axis of the optical fiber, said lensed fiber positioned from the front facet of the laser diode to form an optical coupling region and aligned relative to a lasing cavity of the laser diode to receive a first light output into the fiber.

Claim 24 (original): The laser source module of claim 23 wherein the center of curvature is offset from the center axis by about 2 microns.

Claim 25 (original): The laser source module of claim 23 wherein the optical fiber has a fiber core with a fiber core diameter and the center of curvature is offset from the center axis by about one third to one half the fiber core diameter.

Claim 26 (previously amended): The laser source module of claim 23 wherein the center of curvature is offset from the center axis by about $1/3$ - $2/3$ of a mode field diameter.

Claim 27 (original): The laser source module of claim 23 wherein the laser diode has an optical axis and the optical axis of the laser diode forms an angle of between about 0-6 degrees with the center axis of the optical fiber.

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Claim 28 (original): The laser source module of claim 27 wherein the center axis of the optical fiber is co-planar with the optical axis of the laser diode.

Claim 29 (original): The laser source module of claim 27 where the optical axis of the laser diode is parallel to the center axis of the optical fiber.

Claim 30 (original): The laser source module of claim 27 wherein the optical axis of the laser diode is co-linear with the center axis of the optical fiber.

D' Claim 31 (currently amended): A laser source module comprising:

- a laser diode having a front facet; and
- an optical fiber with a center axis and having

- a lensed fiber end having an angled biconic lens with a first lens axis angled to the center axis at an angle of between about 2-12 degrees, said lensed fiber positioned from the front facet of the laser diode to form an optical coupling region and aligned relative to a lasing cavity of the laser diode to receive a first light output into the fiber.

Claim 32 (original): The laser source module of claim 31 wherein in the angled biconic lens has a lens tip lying on the center axis.
